

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

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### REMARKS

This amendment is responsive to the Office Action dated January 25, 2007. Applicant has amended claims 2, 18, 37, 38, 42, 69, 71, 72, 77, 85. Claims 2-15, 18-55, 58-81 and 83-95 are pending.

### Objections to Figures

In the Office Action, the Examiner objected to Figures 1-2, 3b, and 4-6. The Examiner objected to drawings "because the title, application number, inventor name, attorney docket number information shown at the top of each figure should not be included in the drawings." Applicant again refers the Examiner to 37 C.F.R. 1.84(c), which expressly states that identification information should be provided on the front of each sheet in the top margin. Applicant's drawings include such identification, and the information is located within the top margin of the drawings, in accordance with the rule. Applicant submits that the current identification of the drawings is acceptable, and requests the Examiner to withdraw the objection. To the extent the Examiner maintains the rejection, Applicant requests further clarification with respect to the basis of the objection.

### Allowable Subject Matter

In the Office Action, the Examiner indicated that claims 20-23, 26-27, and 60-62 are allowed. Applicant thanks the Examiner for the allowance of these claims. Applicant generally agrees with the Examiner's position on allowability of claims 20-23, 26-27, and 60-62. As one example, Applicant agrees with the Examiner's conclusion that none of the prior art of record discloses the systems for encoding one or more repetitive data blocks in data communicated over a network, as defined by claims 20-23, and 26-27, and that none of the prior art of record discloses the systems for decoding one or more repetitive data blocks in data communicated over a network, as defined by claims 60-62. These and other features of the claims are not taught or suggested by the references.

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

**Claim Rejection Under 35 U.S.C. § 102**

In the Office Action, the Examiner rejected claims 85–87 under 35 U.S.C. 102(a) as being anticipated by Malcolm et al. (WO 00/07124) (“Malcolm”). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Malcolm fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

Malcolm describes a leaf cache that receives requests from client devices for web objects stored on network servers. If the leaf cache does not already have a cached version of the web object stored in its memory, the leaf cache requests the web object from the root cache, which in turn requests the web object from a server.<sup>1</sup> Malcolm lacks several elements required by independent claim 85.

As one example, Malcolm fails to teach or suggest transmitting routing information in accordance with a routing protocol for identifying one or more addresses of client devices that a decoder module supports over a network to an encoder module, as recited by Applicant’s claim 85. Applicant has amended claim 85 to clarify that the method includes transmitting routing information in accordance with *a routing protocol*. Moreover, claim 85 makes clear that the routing information includes network topology information for the network.

First, an HTTP request or a URL associated with a web object cannot reasonably be construed as routing information associated with a routing protocol. Routing information is information exchanged by network devices in accordance with routing protocols. For example, routing information may be exchanged by network devices in learning a topology of a network.<sup>2</sup> Example routing protocols recognized within the industry include the Border Gateway Protocol (BGP), the Open Shortest Path First (OSPF) routing protocol, Intermediate System routing protocol (ISIS), and the Routing Information Protocol (RIP).

In contrast, the HyperText Transfer Protocol (HTTP) is a protocol for communicating web pages between a web browser and a web server, and the File Transfer Protocol (FTP) is a protocol for moving data files between devices. It is well understood that these are not routing

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<sup>1</sup> Malcolm, page 8, ll. 7–15.

<sup>2</sup> See, e.g., [http://en.wikipedia.org/wiki/Routing\\_information](http://en.wikipedia.org/wiki/Routing_information) (accessed April 24, 2007).

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

protocols and are not used to transmit routing information. Malcolm makes no suggestion that routing information would be transmitted to an encoder module in accordance with a routing protocol for identifying one or more addresses of client devices that a decoder module supports over a network. Moreover, the Examiner acknowledged that Malcolm does not teach the encoder module receiving routing information over the network from one or more corresponding decoder modules.<sup>3</sup>

Second, a URL does not contain an address of a client device that is supported by the decoder module. Quite the opposite, the URL identifies a location of the web object on the server. The Examiner appears to misunderstand this important distinction. For example, the Examiner stated: "It is noted that each web object (extracted data block) is associated with a URL address that identifies the destination address of a device where the web object is located (having a destination address of a client device to which the extracted block is destined)."<sup>4</sup> However, in contrast to the Examiner's assertion, the URL identifies the server device as the device where the web object is located, and does not identify one of the client devices. Even to the extent an HTTP communication having a URL includes the address of the requesting client device, this does not provide any indication that the client device is supported by a decoder module. Therefore, it is unreasonable to construe communication of a URL, as described by Malcolm, as teaching transmitting routing information in accordance with a routing protocol for identifying one or more addresses of client devices that a decoder module supports over a network to an encoder module, wherein the routing information includes network topology information for the network as recited by Applicant's claim 85.

In order to support an anticipation rejection under 35 U.S.C. 102(b), it is well established that a prior art reference must disclose each and every element of a claim. This well known rule of law is commonly referred to as the "all-elements rule."<sup>5</sup> If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. 102(b) is improper.<sup>6</sup>

<sup>3</sup> Office Action dated January 25, 2007, at page 36.

<sup>4</sup> Office Action dated January 25, 2007, at page 47.

<sup>5</sup> See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (CAFC 1986) ("it is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention").

<sup>6</sup> *Id.* See also *Lewmar Marine, Inc. v. Barient, Inc.* 827 F.2d 744, 3 USPQ2d 1766 (CAFC 1987); *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990); *C.R. Bard, Inc. v. MP Systems, Inc.*, 157 F.3d 1340, 48 USPQ2d 1225 (CAFC 1998); *Oney v. Ratliff*, 182 F.3d 893, 51 USPQ2d 1697 (CAFC 1999); *Apple Computer, Inc. v. Articulate Systems, Inc.*, 234 F.3d 14, 57 USPQ2d 1057 (CAFC 2000).

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

Malcolm fails to disclose each and every limitation set forth in claims 85–87. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicant's claims 85–87 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

**Claim Rejection Under 35 U.S.C. § 103**

*Claims 2–4, 6–11, 15, 18, 24–25, 28–31, 42–43, 45–51, 58, 72–79, and 89–91*

In the Office Action, the Examiner rejected claims 2–4, 6–11, 15, 18, 24–25, 28–31, 42–43, 45–51, 58, 72–79, and 89–91 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian et al. (US 6,771,646). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

For example, the applied references fail to teach or suggest the encoder module determining based on the destination address of the client device whether the client device is supported for decoding by at least one corresponding decoder module, as recited by independent claims 2, 18, 72, and 77. Malcolm fails to provide any teaching that would have suggested an encoder module determining based on a destination address of a client device whether the client device is supported for decoding by at least one decoder module. Specifically, there is not suggestion that the root cache in Malcolm is even aware of or maintains any information regarding the client devices supported by the leaf nodes. Instead, Malcolm maintains a series of bit maps to track which individual objects have been sent to which leaf nodes. Passing a URL from the leaf cache to the root cache in Malcolm does not allow the root cache to determine which clients are supported by which leaf caches, nor whether certain clients are not supported by any leaf caches.

As another example, the applied references fail to teach or suggest the encoder module passing through data having a destination address of a client device that is not supported for decoding by a decoder module. As explained in detail in Applicant's Response dated August 30, 2006, the portion of Malcolm cited by the Examiner states that each cache includes a router-

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

switch for receiving messages and distinguishing types of messages that should be processed by the cache from those that should not. Malcolm uses the example that the router-switch can divert all requests using FTP or HTTP to the cache for processing, while passing through other types of requests unchanged. Malcolm thus teaches passing through data based on a type of data, but provides no teaching or suggestion of passing through data based on a destination address of the client device to which the data is destined if the destination address is not supported by a decoder module.

In the Examiner's Response to Arguments section of the Office Action, the Examiner stated that "It is well known in the art that a HTTP or FTP request is a request that is associated with a destination address. In the case of Malcom [sic], the destination address is the URL address by which a web object is located."<sup>7</sup> However, the URL address by which a web object is located identifies the server device that stores the web object, and not a client device, as explained above. Thus, the applied references provide no teaching or suggestion of passing through data based on a destination address of the client device to which the data is destined if the destination address is not supported by a decoder module. To be clear, regardless of whether a client device receives a file via FTP or a web page via HTTP, the destination address for that client does not change. Thus, the Examiner is incorrect in concluding that Malcolm teaches passing through data *based on a destination address of the client device to which the data is destined if the destination address is not supported by a decoder module.*

In addition, independent claim 72 as amended further requires receiving routing information in accordance with a routing protocol over the network from one or more decoder modules. As mentioned above, the Examiner acknowledged that Malcolm does not teach the encoder module receiving routing information over the network from one or more corresponding decoder modules.<sup>8</sup> Therefore, rejection of claim 72 should be withdrawn.

Claim 42 as amended recites the decoder module transmitting routing information in accordance with a routing protocol for identifying one or more addresses of client devices that a decoder module supports over a network to a corresponding encoder module, the routing information including network topology information for the network. As discussed above with

<sup>7</sup> Office Action dated January 25, 2007, at page 48 (emphasis added).

<sup>8</sup> Office Action dated January 25, 2007, at page 36.

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

respect to claim 85, Malcolm fails to teach or suggest the decoder module transmitting any form of routing information in accordance with a routing protocol for identifying one or more addresses of client devices that a decoder module supports over a network. Claim 42 makes clear that the recited routing information includes network topology information for the network. For reasons similar to those set forth above, rejection of claim 42 should be withdrawn.

With respect to dependent claims 8 and 47, Malcolm fails to teach or suggest transmitting an extra header identifying that the contents of a respective data block have been previously transmitted. The portion of Malcolm cited by the Examiner as teaching this feature makes no mention whatsoever of transmitting an extra header, let alone any teaching or suggestion of transmitting an extra header to identify that the contents of a respective data block have been previously transmitted.

With respect to dependent claim 30, Malcolm fails to teach or suggest that at least one of the data blocks is included in a packet and the packet is encapsulated with at least one other packet in an outgoing packet for transmission, as recited by claim 30. The Examiner stated that Malcolm teaches transmitting a web object signature together with a web object reads on this limitation. Applicant respectfully disagrees. A web object signature is not a packet that encapsulates a packet containing the web object. Rather, the web object signature represents additional data transmitted along with the web object within a single stream of IP packet. There is no basis for concluding that Malcolm encapsulates one form of packet within another form of packet.

Sarkissian provides no teaching sufficient to overcome the deficiencies outlined above. Of course, the claims dependent on independent claims 2, 18, 42, 72, 77, i.e., claims 3-4, 6-11, 15, 24-25, 43, 45-51, 58, 73-76, 78-79, and 89-91, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 2-4, 6-11, 15, 18, 24-31, 42-43, 45-51, 58, 72-79, 89-91 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

***Claims 5, 13-14, 44, 52-54, 83-84***

In the Office Action, the Examiner rejected claims 5, 13-14, 44, 52-54, and 83-84 under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al. in view of Sarkissian et al. and further in view of Garcia-Luna-Aceves (US 2002/0056416). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 5 and 44 specify that the encoder module operates as a node in the network and decides a route for the respective extracted data block to a decoder module supporting its destination address. Claims 13-14 and 52-54 specify that the synchronization mechanism is an implicit synchronization mechanism, and wherein the implicit synchronization mechanism is a reliable network transport protocol. Claims 83-84 specify determining network topology information based on routing information, and responsive to multiple decoder modules in the network supporting the same address, determining a destination decoder module based upon network topology information and routing criteria. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Garcia-Luna-Aceves. Garcia-Luna-Aceves provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Garcia-Luna-Aceves. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Garcia-Luna-Aceves or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Garcia-Luna-Aceves and any aspect of the claimed invention.

***Claims 19, 55, 59, 92***

In the Office Action, the Examiner rejected claims 19, 55, 59, 92 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian and in further view of Storer (USPN 4,876,541). Applicant respectfully traverses the rejection. The applied references fail to disclose

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 19 and 92 specify that responsive to the least recently used data structure being at the maximum capacity, the encoder module deletes the previously transmitted data block having the order position of the least recently used data block. Claim 55 specifies that responsive to the data block being unencoded, the decoder module stores the contents of the respective received data block as a previously received data block further comprises determining whether to delete at least one of the previously received data blocks. Claim 59 specifies replacing the previously received data block having the order position of least recently used data block with the respective received data block. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Storer. Storer provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Storer. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Storer or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Storer and any aspect of the claimed invention.

### *Claims 32-33*

In the Office Action, the Examiner rejected claims 32-33 under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al. in view of Sarkissian et al. and in further view of Gorman et al. (USPN 5,394,879). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 32-33 specify that the encapsulation module comprises a timer mechanism for ensuring that the at least one extracted data block is held in a buffer coupled to the encapsulation module for no more than a pre-determined maximum time before being transmitted. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that



Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

incorporation of such features would have been obvious in view of Gorman. Gorman provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Gorman. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Gorman or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Gorman and any aspect of the claimed invention.

***Claims 34-36, 63-68, 80-81***

In the Office Action, the Examiner rejected claims 34-36, 63-68, 80-81 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Sarkissian and in further view of Adriano et al. (USPN 6,484,210). Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claims 34 and 80 specify encoding at least one data block at a first layer of a model describing the flow of data across a network and the encapsulation module encapsulates the at least one extracted data block at a second layer of the model. Claim 35 specifies the system of claim 34 wherein the first and second layers are at the same layer of the model. Claim 36 and 81 specify specifies that one of the layers is a connection-oriented layer and the other layer is a connectionless layer. Claim 63 specifies that the system includes a decapsulation module for decapsulating a block of data received over the network. Claim 64 specifies that the received data block is included in a packet, and the packet has been decapsulated as one packet. The Examiner stated that Malcolm and Sarkissian fail to disclose these features, but asserted that incorporation of such features would have been obvious in view of Adriano. Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm and Sarkissian.

In view of the shortcomings of the Malcolm and Sarkissian references, it is not necessary to comment in detail on the teachings provided by Adriano. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Adriano or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Adriano and any aspect of the claimed invention.

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

***Claims 37-41, 69-71***

In the Office Action, the Examiner rejected claims 37-41, 69-71 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Garcia-Luna-Aceves (USPN 2001/0056416). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 37 specifies that each extracted block having a destination address of a client device to which the extracted data block is destined and that is supported for decoding by at least one corresponding decoder module, and the encoder module passing through data not having a supported destination address. Claim 69 specifies a decoder module that transmits to the encoder module over the network routing information in accordance with a routing protocol for identifying one or more addresses of client devices that the decoder module supports, the decoder module receiving data blocks from an encoder module. Claim 71 specifies the encoder module determining based on the destination address of the client device whether the client device is supported for decoding by at least one corresponding decoder module, and the encoder module passing through data having a destination address of a client device that is not supported for decoding by a decoder module. As explained above with respect to claims 2 and 85, Malcolm fails to disclose or suggest these features of Applicant's invention. Garcia-Luna-Aceves provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm reference, it is not necessary to comment in detail on the teachings provided by Garcia-Luna-Aceves. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Garcia-Luna-Aceves or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Garcia-Luna-Aceves and any aspect of the claimed invention.

***Claim 88***

In the Office Action, the Examiner rejected claim 88 under 35 U.S.C. 103(a) as being unpatentable over Malcolm in view of Storer. Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 88 specifies responsive to the data block being unencoded, storing the contents of the respective received data block as a previously received data block further comprises determining whether to delete at least one of the previously received data blocks. The Examiner stated that Malcolm fails to disclose these features, but asserted that incorporation of such features would have been obvious in view of Storer. Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm references, it is not necessary to comment in detail on the teachings provided by Storer. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Storer or the application of this reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Storer and any aspect of the claimed invention.

#### *Claims 93-95*

In the Office Action, the Examiner rejected claims 93-95 under 35 U.S.C. 103(a) as being unpatentable over Malcolm et al. in view of Adriano. Applicant respectfully traverses the rejection. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Claim 93 specifies decapsulating the received block of data at a first layer of a model describing the flow of data across a network and decoding the received block of data at a second layer of the model. Claim 94 specifies that the first layer and the second layer are the same layer. Claim 95 specifies that one of the layers is a connection-oriented layer and the other layer is a connectionless layer. The Examiner stated that Malcolm fails to disclose these features, but asserted that incorporation of such features would have been obvious in view of Adriano. Adriano provides no teaching sufficient to overcome the basic deficiencies evident in Malcolm.

In view of the shortcomings of the Malcolm references, it is not necessary to comment in detail on the teachings provided by Adriano. However, Applicant neither admits nor acquiesces in the propriety of the Examiner's characterizations of Adriano or the application of this

Application Number 09/915,939  
Amendment dated April 25, 2007  
Responsive to Office Action mailed January 25, 2007

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APR 25 2007

reference to the claimed invention. Rather, Applicant reserves the right to point out differences between Adriano and any aspect of the claimed invention.

For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 5, 13-14, 19, 32-41, 44, 52-55, 59, 63-71, 80-84, 88, and 92-95 under 35 U.S.C. 103(a). Withdrawal of these rejections is requested.

### CONCLUSION

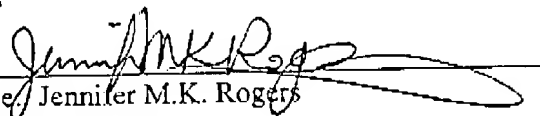
All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

By:

April 25, 2007

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